PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : G06F 9/46 — A1

(11) International Publication Number: **WO 98/02809**

(43) International Publication Date: 22 January 1998 (22.01.98)

(21) International Application Number: PCT/US97/11879

(22) International Filing Date: 10 July 1997 (10.07.97)

(30) Priority Data:
08/680,202 11 July 1996 (11.07.96) US

(71) Applicant: TANDEM COMPUTERS INCORPORATED [US/US]; 10435 N. Tantau Avenue, LOC. 200-16, Cupertino, CA 95014 (US).

(72) Inventor: SCHOFIELD, Andrew; Lindenbuehl 27, CH-6330 Cham (CH).

(74) Agents: GRANATELLI, Lawrence, W. et al.; Graham & James LLP, 600 Hansen Way, Palo Alto, CA 94304 (US).

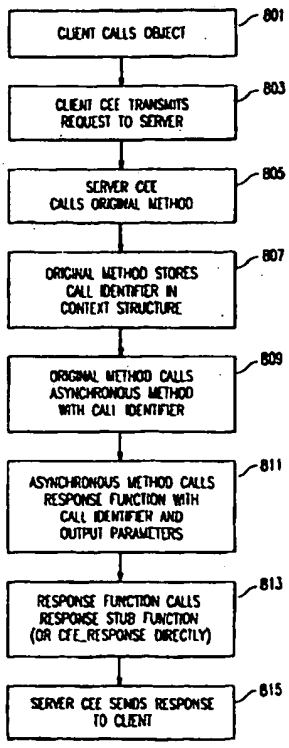
(81) Designated States: JP, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: METHOD AND APPARATUS FOR ASYNCHRONOUSLY CALLING AND IMPLEMENTING OBJECTS

(57) Abstract

A method and apparatus for asynchronously calling and implementing objects is disclosed. Object calls to perform an operation are performed asynchronously by calling the appropriate stub function from the client application and passing in the object reference, input parameters, and a pointer to a completion routine. The object reference, input parameters, and completion routine address are provided to a client-side execution environment. The client-side execution environment stores the completion routine address and transmits the input parameters to a server-side execution environment. The server-side execution environment calls a method in the server application that implements the requested operation. The server application performs the requested operation. Once the call has been responded to, the client-side execution environment calls the completion routine and passes it the output parameters to the requested operation. The client application can continue performing other asynchronous operations before the completion routine is called. To asynchronously implement an object that has been called, the appropriate method function in the server application is called which, in turn, calls an asynchronous operation. Once the asynchronous operation returns, the application responds to the client application.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						